IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants:	Bernardo A. Huberman et al.	§	Confirmation No.:		4497
		§			
Serial No.:	10/695,198	§	Group Art Unit:		2137
		§			
Filed:	10/28/2003	§	Examiner:	Shewaye Gelagay	
		§			
For:	Encoded Attribute Matching	§	Docket No.:		200313922-1
	On Communication Devices	§			

APPEAL BRIEF

Mail Stop Appeal Brief – Patents   Date: September 29, 2008
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

     Appellants hereby submit this Appeal Brief in connection with the above-identified application. A Notice of Appeal was electronically filed on July 28, 2008.

TABLE OF CONTENTS

I.   REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, L.P. (HPDC), a Texas Limited Partnership, having its principal place of business in Houston, Texas. HPDC is a wholly owned affiliate of Hewlett-Packard Company (HPC). The Assignment from the inventors to HPDC was recorded on October 28, 2003, at Reel/Frame 014648/0485.

II.   RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals or interferences.

III.   **STATUS OF THE CLAIMS**

Originally filed claims: 1-27.

Claim cancellations: 7 and 26.

Added claims: 28 and 29.

Presently pending claims: 1-6, 8-25 and 27-29.

Presently appealed claims: 1-6, 8-25 and 27-29.

IV.   STATUS OF THE AMENDMENTS

No claims were amended after the Final Office Action dated May 15, 2008.

V.   SUMMARY OF THE CLAIMED SUBJECT MATTER

The instant application is directed to a technique for enabling communication device users to meet other users with similar interests, characteristics, etc. when they are in close proximity to each other. The technique generally includes the devices comparing attributes and alerting the device users when matches are found. Various permutations of the comparison process and user-notification process are disclosed and claimed.

Independent claim 1 is directed to a method usable on a first communication device 100A adapted to communicate with a second communication device 100B. Figs. 1 and 3, steps 302 and 304; p. 6, ll. 3-4. The method comprises obtaining a first key; encoding an attribute in the first communication device with the first key to produce a first encoded value; and transmitting the first encoded value to the second communication device. Fig. 3, steps 310 and 316; p. 6, l. 26 – p. 7, l. 16. The method also comprises receiving a second encoded value from the second communication device, with the second encoded value comprising an attribute stored in the second communication device that has been encoded with a second key associated with the second communication device. Fig. 3, steps 314 and 318; p. 6, l. 26 – p. 7, l. 16.

Still referring to claim 1, the method further comprises encoding the second encoded value with the first key to produce a third encoded value and transmitting the third encoded value to the second communication device. Fig. 3, step 320; p. 7, l. 23 – p. 8, l. 5. The method still further comprises receiving a fourth encoded value from the second communication device, with the fourth encoded value comprising the first encoded value after being encoded by the second key. Fig. 3, step 322; p. 7, l. 23 – p. 8, l. 5. If the third encoded value matches the fourth encoded value, the method comprises adjusting a total number of matches. Fig. 3, steps 324 and 326; p. 8, ll. 18-32. The method still further comprises enabling users of the first and second communication devices to physically locate one another only if said total number of matches meets or exceeds a threshold. P. 11, ll. 6-20. The first and second communication devices comprise mobile communication devices. Figs. 1 and 2; Fig. 3, step 302.

Dependent claim 8 comprises the limitations of independent claim 1, and is further directed to enabling the communication device users to physically locate one another comprises providing identical images on the first and second communication devices. P. 9, l. 26 – p. 10, l. 9.

Dependent claim 9 comprises the limitations of independent claim 1, and is further directed to enabling the communication device users to physically locate one another comprises emitting matching audible sounds via the first and second communication devices. P. 10, ll. 8-9.

Independent claim 11 is directed to a communication device 100 that comprises a processor 108 and memory 110 accessible to the processor and containing an attribute 112 and software 116 executable on the processor. Fig. 1; p. 3, ll. 11-25. The device also comprises a communication interface 102 coupled to the processor and adapted to permit the communication device to communicate with at least one other external device. *Id.* By executing the software, the processor determines whether the communication device's attribute matches an attribute stored in an external device, without receiving the attributes from the external device, based on a first encoded value received via the local communication interface from the external device. Fig. 3; p. 6, l. 1 – p. 9, l. 25. The first encoded value is indicative of an attribute stored in the external device. Fig. 3, steps 316 and 318; p. 8, ll. 6-17. If the communication device's attribute matches the attribute stored in the external device, the communication device adjusts a number of matches. Fig. 3, steps 324 and 326; p. 8, ll. 18-32. If the number of matches does not meet or exceed a threshold, the communication device refrains from disclosing a physical location of a user of the external device to a user of the communication device, unless a predetermined attribute of the communication device matches another attribute of the external device. P. 11, ll. 6-20. The communication device comprises a mobile communication device. Figs. 1 and 2; p. 3, ll. 16-20.

Dependent claim 19 comprises the limitations of independent claim 11, and is further directed to an antenna 114 coupled to the processor, where the communication device is adapted to allow users of the communication and

external devices to speak with one another via a service provider network 115. Figs. 1 and 2; p. 3, l. 13; p. 4, ll. 12-15.

Independent claim 24 is directed to a system that comprises a first communication device 100A having a first plurality of attributes 112A and a first key and a second communication device 100B having a second plurality of attributes 112B and a second key, where the second communication device is adapted to communicate with the first communication device. Fig. 2; p. 5, ll. 11-31. The first communication device encrypts each of the first plurality of attributes with a first key to form a first plurality of encrypted values and the second communication device encrypts each of the second plurality of attributes with a second key to form a second plurality of encrypted values. Fig. 3, steps 316 and 318; p. 8, ll. 6-17. The first communication device transmits each first encrypted value to the second communication device and the second communication device transmits each second encrypted value to the first communication device. *Id.* The first communication device encrypts each second encrypted value with the first key to produce a third plurality of encrypted values, and the second communication device encrypts each first encrypted value with the second key to produce a fourth plurality of encrypted values. Fig. 3, steps 320 and 322; p. 7, l. 23 – p. 8, l. 5.

Still referring to claim 24, the first communication device transmits each third encrypted value to the second communication device, and the second communication device transmits each fourth encrypted value to the first communication device. *Id.* If one of the first or second communication devices determines that any third encoded value matches any fourth encoded value, said one of the first or second communication devices enables a user of that communication device to physically locate a user of the other communication device. Fig. 3, steps 324, 326, 328, 330 and 332; p. 9, l. 1 – p. 10, l. 28. The first communication device comprises a mobile communication device. Figs. 1 and 2; p. 3, ll. 16-20. The first communication device is capable of designating a subset of the first plurality of attributes as information that may always, occasionally or never be revealed to the second communication device. P. 11, ll. 4-6.

Dependent claim 28 comprises the limitations of claim 1, and is further directed to emitting an audible ring tone indicative of said total number of matches. P. 10, ll. 19-23.

Dependent claim 29 comprises the limitations of claim 24, and is further directed to, if the first communication device is physically separated from the second communication device by a predetermined distance, the first communication device generating a message indicative of said separation. P. 11, l. 29 – p. 12, l. 4.

VI.   GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-6, 10-18, 20-25 and 27 are rendered obvious under 35 U.S.C. § 103(a) by Huberman, Yeager and Hanson.

Whether claims 8-9, 19 and 28 are rendered obvious under 35 U.S.C. § 103(a) by Huberman, Yeager, Hanson and Zacks.

Whether claim 29 is rendered obvious under 35 U.S.C. § 103(a) by Huberman, Yeager, Hanson and Doub.

VII.   ARGUMENT

A.   Summary of Relevant Art

1.   Huberman

Huberman is directed to techniques for enabling communication devices to determine similarities between their respective preferences. Abstract. Huberman is also directed to techniques for discovering communities with shared values or preferences. *Id.* Huberman adopts known techniques from the cryptographic literature to enable these capabilities. *Id.* These cryptographic techniques, which facilitate the discovery techniques described above, are explained in detail in Huberman, Appendix A.

2.   Zacks

The relevant portion (paragraph [0050]) of Zacks is directed to forms of communication between communication devices. Paragraph [0050]. Zacks explains that devices may communicate with each other using "video still picture, text messaging, audio and/or icon or symbolic messaging." *Id.* Zacks then provides numerous examples of such communication forms. *See id.* For example, files of recorded data, like video files and text files, may be exchanged.

3.   Doub

The relevant portion (col. 3, ll. 43-61) of Doub is directed to signaling between two devices. Col. 3, ll. 43-61. Doub teaches that a transmitter 220 sends a transmit signal to a remote device 110. Col. 3, ll. 45-46. In turn, the remote device 110 determines whether the transmitter 220 and the electronic device 100 (which contains the remote device 110) are within a transmit range of each other. Col. 3, ll. 46-49. If they are within transmit range, the remote device 110 sends a reply signal to the transmitter 220, ostensibly acknowledging receipt of the transmit signal. Col. 3, ll. 52-55. If they are not within a transmit range, no reply signal is sent. Col. 3, ll. 55-58.

B.   35 U.S.C. § 103(a) Rejections in View of Huberman, Yeager and Hanson

1.   Claims 1-6 and 10

Claims 1-6 and 10 stand rejected as allegedly obvious in view of Huberman, Yeager and Hanson. Appellants traverse this rejection. Claim 1 is representative of this group of claims. The grouping should not be construed to mean the patentability of any of the claims may be determined in later actions (*e.g.*, actions before a court) based on the groupings. Rather, the presumption of 35 USC § 282 shall apply to each of these claims individually.

Claim 1 requires "if the third encoded value matches the fourth encoded value, adjusting a total number of matches" and "enabling users of the first and second communication devices to physically locate one another only if said total number of matches meets or exceeds a threshold." The combination of Huberman, Yeager and Hanson fails to teach this combination of limitations.

The Examiner asserts that Huberman discloses these limitations under the "Private Preference Matching" subtitle in the "Community Discovery" section. While the combination of Huberman, Yeager and Hanson may allow for compatibility testing, it does not appear to allow users to physically locate each other **if and only if** the necessary condition of passing a threshold has been met. Stated in another way, claim 1 requires that it be necessary that a threshold be passed before two users may physically locate each other; Huberman has no such stringent restriction and may allow user contact even if the threshold has not been passed.

As just one example, Huberman may permit inter-user contact if matching keys are detected (as disclosed in the "Community Discovery" portion of Huberman, section 3), which means that the Huberman combination does **not** teach that two parties are able to physically locate each other **if and only if** a threshold has been met, as required by claim 1. Yeager and Hanson fail to satisfy Huberman's deficiencies.

Based on the foregoing, Appellants respectfully request that the rejections of the claims in this grouping be reversed, and the claims set for issue.

2.   Claims 11-18 and 20-23

Claims 11-18 and 20-23 stand rejected as allegedly obvious in view of Huberman, Yeager and Hanson. Appellants traverse this rejection. Claim 11 is representative of this group of claims. The grouping should not be construed to mean the patentability of any of the claims may be determined in later actions (*e.g.*, actions before a court) based on the groupings. Rather, the presumption of 35 USC § 282 shall apply to each of these claims individually.

Claim 11 requires "wherein, if the number of matches does not meet or exceed a threshold, the communication device refrains from disclosing a physical location of a user of the external device to a user of the communication device, **unless** a predetermined attribute of the communication device matches another attribute of the external device" (emphasis added). As explained above with reference to claim 1, the combination of Huberman, Yeager and Hanson fails to teach the first part of this limitation ("wherein, if ... the communication device"). The Examiner erred in rejecting claim 11 for at least this reason.

Further, the Examiner erred in rejecting claim 11 for an additional reason. The combination of Huberman, Yeager and Hanson fails to teach or even suggest the second portion of this limitation ("unless ... external device"). In fact, in the Final Office Action, the Examiner failed to indicate where any of these references, taken alone or in combination, teaches or even suggests such a limitation. Further, Appellants themselves are unable to find any teaching in the combination of references that, like claim 11, provides exceptions for certain matching user attributes in case the threshold is not met. Absent any such indication from the Examiner, and absent any relevant teaching in the combination of references, the rejection against claim 11 should be reversed.

Based on the foregoing, Appellants respectfully request that the rejections of the claims in this grouping be reversed, and the claims set for issue.

3.   Claims 24-25 and 27

Claims 24-25 and 27 stand rejected as allegedly obvious in view of Huberman, Yeager and Hanson. Appellants traverse this rejection. Claim 24 is representative of this group of claims. The grouping should not be construed to

mean the patentability of any of the claims may be determined in later actions (*e.g.*, actions before a court) based on the groupings. Rather, the presumption of 35 USC § 282 shall apply to each of these claims individually.

Claim 24 requires "wherein the first communication device is capable of designating a subset of the first plurality of attributes as information that may always, occasionally or never be revealed to the second communication device." The combination of Huberman, Yeager and Hanson fails to teach or even suggest such a limitation. In fact, in the Final Office Action, the Examiner failed to identify any portion of these references or the combination thereof that teaches or even suggest this limitation. Appellants themselves are unable to find any mention in said combination of designating one or more user attributes as information that may always, occasionally or never be revealed to another communication device, as required by claim 24. Absent any such indication from the Examiner, and absent any relevant teaching in the references, the rejection against claim 24 should be reversed.

Based on the foregoing, Appellants respectfully request that the rejections of the claims in this grouping be reversed, and the claims set for issue.

C.   35 U.S.C. § 103(a) Rejections in View of Huberman, Yeager, Hanson and Zacks

1.   Claim 8

Claim 8 requires "wherein enabling the communication device users to physically locate one another comprises providing identical images on the first and second communication devices." The Examiner admits that Huberman, Yeager and Hanson fail to teach such a limitation and, thus, turns to Zacks. The Examiner asserts that Zacks' teaching at paragraph 50, combined with Huberman, Yeager and Hanson, renders this limitation obvious.

Appellants traverse this rejection. This portion of Zacks appears to make no mention of providing "identical images." This portion of Zacks merely teaches that various communication forms can be used, including video still picture, text message, audio and/or icon or symbolic messaging, etc. This portion of Zacks then provides examples of such communication forms, none of which appears to

even resemble "identical images" displayed as part of an effort to enable communication device users to physically locate each other. Because the combination of these references fails to teach all of claim 8, the Examiner's rejection should be reversed.

2.   Claim 9

Claim 9 requires "wherein enabling the communication device users to physically locate one another comprises emitting matching audible sounds via the first and second communication devices." The Examiner admits that Huberman, Yeager and Hanson fail to teach such a limitation and, as a result, turns to Zacks. The Examiner asserts that this limitation is taught by Zacks at paragraph 50. However, as with claim 8 above, this portion of Zacks appears to make absolutely no mention of "matching audible sounds," and thus the combination of references certainly does not appear to teach or even suggest emitting matching audible sounds in an effort to enable users to physically locate each other. Because the combination of these references fails to teach all of claim 9, the Examiner's rejection should be reversed.

3.   Claim 19

Claim 19 depends on independent claim 11. The rejection against claim 19 should be reversed at least because the rejection against claim 11 should be reversed.

4.   Claim 28

Claim 28 requires "further comprising emitting an audible ring tone indicative of said total number of matches." The Examiner admits that Huberman, Yeager and Hanson fail to teach this limitation. Instead, the Examiner asserts that paragraph 50 of Zacks, combined with Huberman, Yeager and Hanson, teaches this limitation.

Appellants traverse this rejection. This portion of Zacks appears to make no mention of an audible ring tone, period. Even if it did (which it does not), the combination of references still does not teach an audible ring tone that is indicative of a total number of matches. Appellants respectfully point out that Zacks merely teaches that audio is one way in which communication device

users may communicate with each other. Combining such a teaching with Huberman, Yeager and Hanson is a far cry from teaching an audible ring tone that indicates a total number of matches. If the Examiner intends to make an obviousness rejection against this claim, then the Examiner should at the very least find a reference that teaches audible ring tones and explain the motivation one of ordinary skill would have to make the ring tone indicate a total number of matches, all without using impermissible hindsight. The Examiner's present rejection certainly does not come this far. Thus, the rejection against claim 28 should be reversed.

D.   35 U.S.C. § 103(a) Rejections in View of Huberman, Yeager, Hanson and Doub: Claim 29

Claim 29 requires "wherein, if the first communication device is physically separated from the second communication device by a predetermined distance, the first communication device generates a message indicative of said separation." The Examiner admits that Huberman, Yeager and Hanson fail to teach such a limitation. The Examiner instead asserts that Doub teaches this limitation at col. 3, ll. 43-61.

Respectfully, the Examiner is mistaken. This portion of Doub teaches that, upon receiving a signal, a device sends a reply signal only if the device is within range of the destination device. If the devices are within range of each other, a reply signal is sent. Otherwise, no reply signal is sent. This teaching fails to render claim 29 obvious because Doub's reply signal is **not** "indicative of said separation," as required by claim 29. Doub's reply signal is merely one that acknowledges receipt of the original signal. Because the reply signal is not indicative of separation between the devices, the Examiner's rejection of claim 29 should be reversed.

Based on the foregoing, Appellants respectfully submit that the rejections of the claims in this first grouping be reversed, and the claims set for issue.

E.   Conclusion

For the reasons stated above, Appellants respectfully submit that the Examiner erred in rejecting all pending claims. It is believed that no extensions

of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,

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VIII. **CLAIMS APPENDIX**

1. (Previously presented) A method usable on a first communication device adapted to communicate with a second communication device, comprising:

> obtaining a first key;
>
> encoding an attribute in the first communication device with the first key to produce a first encoded value;
>
> transmitting the first encoded value to the second communication device;
>
> receiving a second encoded value from the second communication device, the second encoded value comprising an attribute stored in the second communication device that has been encoded with a second key associated with the second communication device;
>
> encoding the second encoded value with the first key to produce a third encoded value;
>
> transmitting the third encoded value to the second communication device;
>
> receiving a fourth encoded value from the second communication device, the fourth encoded value comprising the first encoded value after being encoded by the second key; and
>
> if the third encoded value matches the fourth encoded value, adjusting a total number of matches; and
>
> enabling users of the first and second communication devices to physically locate one another only if said total number of matches meets or exceeds a threshold;
>
> wherein the first and second communication devices comprise mobile communication devices.

2. (Original) The method of claim 1, wherein obtaining a key comprises generating a random number.

3. (Original) The method of claim 1, wherein obtaining a key comprises reading a pre-programmed value from memory.

4.   (Original) The method of claim 1, wherein encoding the attribute with the first key comprises calculating the attribute to the power of the first key to produce the first encoded value.

5.   (Original) The method of claim 1, wherein the second encoded value comprises the attribute of the second device raised to the power of the second key and encoding the second encoded value with the first key comprises raising the second encoded value to the power of the first key.

6.   (Original) The method of claim 1, further comprising transmitting the first communication device's attribute to the second communication device only after determining that the third encoded value matches the fourth encoded value.

7.   (Canceled).

8.   (Previously presented) The method of claim 1, wherein enabling the communication device users to physically locate one another comprises providing identical images on the first and second communication devices.

9.   (Previously presented) The method of claim 1, wherein enabling the communication device users to physically locate one another comprises emitting matching audible sounds via the first and second communication devices.

10.   (Previously presented) The method of claim 1, wherein enabling the communication device users to physically locate one another comprises providing each communication device with physical location information of the other communication device.

11. (Previously presented) A communication device, comprising:

a processor;

memory accessible to said processor and containing an attribute and software executable on said processor;

a communication interface coupled to said processor and adapted to permit the communication device to communicate with at least one other external device;

wherein, by executing said software, said processor determines whether the communication device's attribute matches an attribute stored in an external device, without receiving the attributes from the external device, based on a first encoded value received via the local communication interface from the external device, said first encoded value being indicative of an attribute stored in the external device;

wherein, if the communication device's attribute matches the attribute stored in the external device, the communication device adjusts a number of matches;

wherein, if the number of matches does not meet or exceed a threshold, the communication device refrains from disclosing a physical location of a user of the external device to a user of the communication device, unless a predetermined attribute of the communication device matches another attribute of the external device;

wherein the communication device comprises a mobile communication device.

12. (Original) The communication device of claim 11 wherein the processor encodes an attribute contained within the communication device with a key to produce a second encoded value that the processor causes to be transmitted through the communication interface to the external device.

13.   (Original) The communication device of claim 11, wherein the first encoded value received from the external device comprises an attribute stored in the external device that has been encoded with a key unique to the external device.

14.   (Original) The communication device of claim 11, further comprising a first key stored in said memory and unique to said communication device, wherein the processor encodes the first encoded value received from the external device with the first key to produce a third encoded value.

15.   (Original) The communication device of claim 14, wherein the processor transmits the third encoded value to the external device.

16.   (Original) The communication device of claim 14, wherein the processor receives a fourth encoded value from the external device, the fourth encoded value comprising an encoded version of a second encoded value using the key unique to the external device, the second encoded value produced by the processor encoding an attribute contained within the communication device.

17.   (Original) The communication device of claim 16, wherein the processor determines whether the third encoded value matches the fourth encoded value.

18.   (Original) The communication device of claim 12, wherein the key comprises a random number.

19.   (Original) The communication device of claim 11, further comprising an antenna coupled to the processor, wherein the communication device is adapted to allow users of the communication and external devices to speak with one another via a service provider network.

20.   (Original) The communication device of claim 11, wherein the processor transmits text messages to the external device via the local communication interface.

21.   (Original) The communication device of claim 11, wherein the communication interface provides a direct, wireless communication with the external device.

22.   (Original) The communication device of claim 21, wherein the communication interface implements Bluetooth.

23.   (Original) The communication device of claim 11, wherein the communication device's attribute comprises an attribute selected from the group comprising contacts, phone numbers, keywords, interests, appointments and favorite restaurants.

24.   (Previously presented) A system, comprising:

   a first communication device having a first plurality of attributes and a first key;

   a second communication device having a second plurality of attributes and a second key, the second communication device adapted to communicate with the first communication device;

   wherein the first communication device encrypts each of the first plurality of attributes with a first key to form a first plurality of encrypted values and the second communication device encrypts each of the second plurality of attributes with a second key to form a second plurality of encrypted values;

   wherein the first communication device transmits each first encrypted value to the second communication device and the second communication device transmits each second encrypted value to the first communication device;

wherein the first communication device encrypts each second encrypted value with the first key to produce a third plurality of encrypted values, and the second communication device encrypts each first encrypted value with the second key to produce a fourth plurality of encrypted values;

wherein the first communication device transmits each third encrypted value to the second communication device, and the second communication device transmits each fourth encrypted value to the first communication device; and

wherein, if one of the first or second communication devices determines that any third encoded value matches any fourth encoded value, said one of the first or second communication devices enables a user of that communication device to physically locate a user of the other communication device;

wherein the first communication device comprises a mobile communication device;

wherein the first communication device is capable of designating a subset of the first plurality of attributes as information that may always, occasionally or never be revealed to the second communication device.

25.   (Original) The system of claim 24, wherein each of the first communication device and the second communication device implement a discovery mode wherein each communication device monitors for the presence of another communication device.

26.   (Canceled).

27.   (Original) The system of claim 24, wherein the first key is distinct from the second key.

28.   (Previously presented) The method of claim 1 further comprising emitting an audible ring tone indicative of said total number of matches.

29.   (Previously presented) The system of claim 24, wherein, if the first communication device is physically separated from the second communication device by a predetermined distance, the first communication device generates a message indicative of said separation.

IX.   EVIDENCE APPENDIX

None.

X.   RELATED PROCEEDINGS APPENDIX

None.